

REMARKS

Claims 22 – 28 have been examined. Claims 22 – 27 stand rejected under 35 U.S.C. §102(e) as anticipated by U.S. Pat. No. 5,788,778 (“Shang”) and Claim 28 stands rejected under 35 U.S.C. §103(a) as unpatentable over Shang. The rejections are respectfully traversed.

The “Response to Arguments” section of the Office Action takes the position that mixing occurs between a flow of reactive radicals and a diluent gas at the T-junction of pipe 57 shown in Fig. 1 of Shang. This position is predicated on the view expressed in the Office Action that a diluent gas is provided by at least one of the two gases sources identified by reference number 32 in Shang (Office Action, p. 6). This view is not believed to be supported by any disclosure of Shang.

The Office Action asserts that it is evident “that Shang forms a nonplasma ... diluent gas flow ... from the two gases” (Office Action, p. 6). This assertion is not understood. What Shang teaches explicitly is that gas supplies 32 “contain[] the gases that are used during deposition,” going on to explain that “[t]he particular gases that are used depend upon the materials [that] are to be deposited onto the substrate” (Shang, Col. 4, ll. 21 – 24). Nothing in this disclosure in any way suggests that either of the gases is a “diluent gas,” which is a term well understood in the art and which is defined in the Application at p. 21, ll. 16 – 27. Indeed, the explicit teaching that the particular gases depend upon the material to be deposited instead suggests to those of skill in the art that they are precursor gases, i.e. that they provide chemical elements to be incorporated into the material being deposited. A common example in this art might be the use, for instance, of SiH_4 and O_2 to deposit silicon oxide on a substrate, neither of which is then used as a diluent.

As noted in the previous response, the only disclosure of a diluent gas flow in Shang appears to be the disclosure of an optional “source of a minor carrier gas 52 that is connected to the remote activation chamber through another valve and flow control mechanism 53” (*id.*, Col. 4, ll. 64 – 66). The Office Action does not dispute that the correctness of the analysis in the previous response that with an identification of source 52 as the source of a diluent gas, the claim requirement that the mixing occur “at a mixing location downstream of a location of forming said flow of said reactive radicals and anterior to said chamber” is not disclosed in Shang.

For these reasons, the claims are respectfully believed to be patentable over the cited art.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

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